## BOOK REVIEWS

**Floods of Fortune: Ecology & Economy Along the Amazon. Michael Goulding, Nigel J. H. Smith, and Dennis J. Mahar. 1996. Columbia University Press, New York, NY. 193 p. $29.95 cloth.**

At first mention, the Amazon basin creates images of a vast expanse of lowland rainforest. It is the home of much of the world's biodiversity and a very threatened resource. Goulding, Smith, and Mahar focus *Floods of Fortune* on about 2-3% of the basin (250,000 km$^2$), which includes the Amazon river, its tributaries, and a very dynamic floodplain corridor. By narrowing the regional extent, the book provides an opportunity to see in better detail the changes that occur downstream from the upper (in the Andes), to the middle, and to the lower (estuary) basin, and also some remarkable differences in response to geology. The sediment-rich whitewater rivers drain from the Andes in the west, the clearwater rivers flow off the Brazilian Highlands to the southeast, and the blackwater streams, like the Rio Negro, flow through eroded sands in the west-central basin. The streams directly influence the plants and animals in what the authors refer to as "specialized rainforests." Riverine ecosystems are diverse and include floodplain, levee, and tidal forests, estuaries, floating meadows, floodplain lakes, and stream environments. The book emphasizes how these land-water ecosystems contribute to the distribution and abundance of economically important natural resources. Because of their current and potential economic value, floodplain forests and fisheries are probably the most threatened resources of the Amazon basin.

Michael Goulding, a Senior Scientist at Rainforest Alliance, Nigel Smith, a geographer at the University of Florida, and Dennis Mahar, the World Bank's Resident Representative in Brazil are effective collaborators on a book that integrates studies of ecology and natural history, with studies of human activities and economic development. The book reflects their broad knowledge of the basin and expertise in Amazonian fisheries, plant uses, and resource policies. The authors do not question the presence of humans, but rather critically evaluate their activities and some differences between sustainable resource use and exploitation.

The text is organized into nine chapters, which are followed by an abbreviated list of plants and animals, an extensive bibliography, photo credits, and an index. Chapter 1 introduces the geography of "The Endangered Treasure" and identifies some major resource concerns. Chapters 2 and 3 present a history that extends from very early (30,000 BP) indigenous hunting and gathering societies to the commercial ventures of European settlers after 1500. The economic benefits of jute production (1929-1960), floodplain logging (1960s-1980s), hydroelectric power, and gold mining (after 1979) are carefully compared with their ecological impacts. Chapters 4 through 7 show clearly the relationships between biodiversity and natural resources. The floodplain/stream ecosystems have a large portion of the Amazon's total biodiversity with about 350-400 birds, 100 mammals, 150 reptiles, about 100 frogs, 2,000-3,000 (1,700 described) fish, and many insect species. The region also provides a diversity of extractive resources. Not of insignificant value are the profits obtained through the shipping of ornamental fishes, frogs, and birds, and the great importance of palms as the "trees of life" (p. 119). Two chapters (5 and 6) focus on fish populations, showing their role as indicators of important nutrient exchanges between land and water. Fish are the "single most important source of animal protein" in the Amazon basin (p. 90) and many eat fruits from the floodplain forest! Expanding urban centers and regional export demands place tremendous pressure on estuary (at Belém) and interior (at Manaus, Santarém, and Porto Vello) fisheries. When looking at the mix of land-use activities that now characterize the region, the land-water conflicts associated with agricultural production, especially cattle and water buffalo, emerge as major concerns in Chapter 8. The last chapter "Uncovering the Treasure" presents an objective view of conservation that acknowledges the problems, considers some opportunities for growth, and realizes the complexities of human-resource needs in this dynamic floodplain environment.

*Floods of Fortune* is written for a broad audience with general interests in the tropics, conservation, and natural resources. The book is illustrated beautifully with all photos by the authors, M. Goulding (>90%) and N. Smith. These pictures are used to enhance the text and allow the reader to visualize some amazing interrelationships. The underwater photos of fish swimming around tree trunks are particularly captivating. My two frustrations with the book are the absence of direct citations to the over 150 bibliographic references and the need for more and better maps. Both problems weaken the book's contributions as a detailed reference on research studies and spatial patterns. Instead, the book serves as a synthesis of information from a broad range of research areas. *Floods of Fortune* is a unique and valuable contribution to the environmental literature because of its explicit focus on human-environment relations in one of the most complex physical settings on earth—the floodplain corridor of the Amazon River.

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**Maps and Civilization: Cartography in Culture and Society, 2nd Edition. Norman J. W. Thrower. 1996. The University of Chicago Press, Chicago, IL. 326 p. $17.95 softcover.**

With the addition of 76 pages, almost half of which depict unique maps not in the previous edition, Thrower's *Maps and Civilization: Cartography in Culture and Society* becomes even more of a gem of map genealogy and even more essential for study by liberal arts undergraduates. An amazingly compact anthology of maps, quite meaningfully written, it is "must reading"

for cartography students. Organized chronologically from maps of preliterate people to modern cartography, it also covers maps of classical antiquity, early maps of East and South Asia, cartography in Europe and Islam in the Middle Ages, the rediscovery of Ptolemy and cartography in Renaissance Europe, cartography in the Scientific Revolution and the Enlightenment, and diversification and development in the nineteenth century. Matching this text in their value are the appendices. Included in chart form is an expanded selection of map projections identified by century, inventor, family/form, salient characteristics, and principal use. A "short" list of isograms ranked by the date of their assumed first use in cartography numbers to 44. An extended cartographic glossary and rich, annotated reference notes are also of special merit.

Much more richly endowed with maps than in the first edition, the chapter on maps from prehistory and the preliterate period presents a visually exciting array of maps. The Bedolina map from northern Italy, ca. 2000-1500 B.C. is a petroglyph called by some "the oldest known plan of an inhabited site." Details of the Codex Mendoza, an Aztec manuscript map of Mexico City, are explained. A portion of the Mississippi-Missouri river system representationally drawn as a manuscript map by Amerindians, a crocodile-shaped bark painting from Australia used to help children recognize the shape of their land, and a Marshall Islands stick chart emphasize further the universal need of humans to make maps out of diverse materials for particular purposes. Though Thrower praises the comprehensive nature of the Amerindian Mississippi-Missouri map comparing it favorably with the hydrography on modern maps, I bemoan the loss of a more blanket sentence in the first edition which could be attitude-shaping for modern students. It read: "Certain Eskimo and American Indian groups, for example, with rudimentary equipment have produced charts which are well suited to their needs, and which compare favorably with those of the same areas made by surveyors of technologically advanced countries."

Each of the last five chapters of the book is greatly enhanced by line drawings of projections for world maps devised in that era and arranged together on a page for easy comparison. Except for the cover, the maps are reproduced in black and white, and in this second edition, attempts were made to make many of them more readable by enlargement. One still yearns to see many of them in color. This lack of color leads Thrower to make an unsubstantiated and faulty value claim when comparing two computer maps declaring, "most people find the later example more appealing aesthetically as well as more informational than the earlier one." The "eye of the beholder" or in cartographic terms, the map user was discounted. If it were shown in full color with a legend, the computer map of voting patterns in Los Angeles should be far more aesthetically pleasing to a political geographer than the Northridge Earthquake Epicenters map with which it is being unfavorably compared. Granted, the Northridge map seems to portray a more complex set of geographic relationships, but Thrower should never have fallen into an "aesthetics trap." A claim for the Northridge map being more sophisticated geographically would have been much more accurate. As vital as cartographic source books are, lack of color in this book and its historical chronology make it a compelling candidate for conversion into a colorful CD-ROM product.

In just eight pages, the transmogrification (a Thrower verb) of cartography into geographical information systems (GIS) is coherently presented, and along the way we are introduced to the historical nugget that Lord Byron's daughter Ada, Countess of Lovelace, wrote the first program for a computer. A full discussion of animated cartography ensues, but missing is mention of the computer capabilities on the horizon. Excursions into virtual reality, the potential for interactive explorations such as Monmonier's graphic narratives and especially the speed with which other cutting edge cartographic innovations are being developed is not sufficiently hinted at, ending the book with the air that it is already dated. Even one sentence recognizing some of the dilemmas and ferment computer technology and geographical information systems have posed for classical cartography might have alleviated this impression.

Reviewers of this book's first edition criticized its title for alluding to the relationships between maps, culture, and civilization while its content addressed a scant few of these historical issues in the field of cartography. Neither does this current work delve literally into the connections between maps, culture, society, and civilization. One might argue that the title and subtitle should stay to serve as a reminder establishing in students' minds that maps are an expression of these complicated relationships in human history. For cartographers, these titles conjure up a vision of the book that is waiting to be written, going beyond the map products by pulling together the historical threads of changing human needs and technology as related to mapmaking amidst the world's cultures, societies, and civilizations.

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**Bucky Works: Buckminster Fuller's Ideas For Today. J. Baldwin. 1996. John Wiley and Sons, Inc., New York, NY. 243 p. $29.95 hardcover.**

*We saw it, we heard it, and now we're telling you so you can experience it along with us—.* I John 1:3

*Note that this is not a biography or scholarly, footnoted critique of Bucky's work. —My quotations and paraphrases are mostly taken from notes taken at his lectures and during our talks, but all of these ideas appear repeatedly in various forms throughout his writings and taped lectures. This book is intended to get you interested in finding out more. Nobody does Bucky better than Bucky.*

With this introduction, J. Baldwin begins a succinct overview of the life and efforts of R. Buckminster Fuller, thinker, inventor, and idealist, who based his life upon

the assumption that "only energy-efficient, resource efficient design could 'make the world work for everyone' for the first time in history."

Bucky's ideas were developed over a period from 1927 to his death in 1983. Born in 1895, Bucky faced several failures in his early adult life. Confronted with the responsibility of supporting his family, "'It was jump or think.' He chose think." His consequent work demonstrates that there is little doubt that he possessed the thinking abilities to define and create many significant ideas and systems, which although not making market driven changes in our culture and in the world, did define the possibilities and cause us to recognize the choices we must make as a society.

In adopting a viewpoint of life not in conformance with the prevailing social conditions surrounding him, Bucky was able to develop and invent many revolutionary concepts as well as develop a following of those who were and are convinced that he best expressed what they felt in their souls. The commitments of those who followed and supported Bucky are not unlike that of a disciple following the one who holds the secret of life. The author of this book, J. Baldwin, is one of those disciples, a follower of Bucky, who has dedicated his life to bringing into reality Buck's ideas. His enthusiasm and excitement echo throughout the book.

Although much has been written by both Bucky and others describing his life, little has been written in recent years and recent students and practitioners have lost sight of the work and ideas. Baldwin hopes to rekindle interest in these ideas by an overview or review of Buck's life.

Baldwin does this through descriptions of the most famous projects. The first half of the book is ordered in chapters which describe the developments of housing in the form of the dymaxion house, the geometric theories of synergetics, the transportation concepts of the dymaxion automobile and geodesic boats, and the development of the geodesic dome.

The second half of the book is devoted to describing how these ideas impacted our society and culture through built projects and the learning experiences of professionals and lay public. Bucky became most influential in the latter half of his life through his lengthy verbal presentations of not just his projects, but the whole philosophy which he had developed enabling him to generate his ideas. If there was a weakness, it had to lie in Buck's aversion to finalizing a project and solving all the unforeseen details in bringing an idea to physical expression.

What is truly impressive about the philosophy is the commitment to describe analytic reality as it really is without human analogy and myth. The universe is seen and described as "universe" without the article, to always recognize that we live in an environment of dynamic process and not just one of static three dimensions. "Sunset" and "sunrise" are seen as anachronisms to be avoided so they do not contaminate our concepts of what is really happening in our daily excursions on planet earth.

As is so often true, it is this very strength which poses the biggest weakness of the Fuller philosophy and that of his followers. Their frustration is that these ideas have not become more popular and adopted by society as a whole. It is Bucky's and his followers failure that they do not recognize that people are more than robots, that people do have feelings, that history expresses these feelings and intellectually describes a path and process which goes beyond analytic understanding of who we are.

Buck's ideas are finding fresh impetus today in the form of what is variously described as ecological design, solar architecture, green architecture, and sustainable design. The approach of Amory Lovins at the Rocky Mountain Institute is very much akin to that of Buckminster Fuller applied to a slightly different problem.

This is a good book for those who are new to the world of Bucky Fuller or would like to refresh their understanding of what it is that awakens the possibilities of process upon planet earth. A fresh effort to connect these ideas with our current social concerns with the earth's ecology and reduced resource consumption is certainly an appropriate direction.

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